IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of **Julka** et al.	)	Patent Pending
Serial No.: **10/672,233**	)	Examiner: Fred A. Casca
Filed: **September 25, 2003**	)	Group Art Unit: 2617
For: **A Method and Apparatus for Efficient Dormant Handoff of Mobile Stations Having Multiple Packet Data Service Instances**	)	Confirmation No.: 8712

Attorney's Docket No: **4740-223**

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☐ deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☐ transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (703) 273-8300.

_____ _____
Date

This correspondence is being:

☒ electronically submitted via EFS-Web

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The real party in interest is Telefonaktiebolaget L.M. Ericsson.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences to the best of Applicant's knowledge.

III. STATUS OF CLAIMS

Claims 1-43 are pending. Claims 1-6, 8-13, 16-23, 25, 28-40, and 43 are rejected. Claims 7, 14, 15, 24, 26, 27, 41, and 42 are objected to as being allowable but for their dependence on a rejected base claim. Applicant appeals all rejections; namely, the rejection of claims 1-6, 8-13, 16-23, 25, 28-40, and 43.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The rejected claims under appeal include independent claims 1, 17, 25, 29, and 30. All claims relate to handoff of a dormant mobile station having multiple packet data service instances. All figure, paragraph, and line references below are directed to the filed application.

All claims relate to dormant handoff of a mobile station having multiple packet data service instances. If a mobile station is dormant in the packet data sense and it is not involved in any circuit-switched voice communications, it generally will not have any dedicated traffic channel assigned to it. See paragraph [0006]. Dormant handoff is required anytime a dormant mobile station moves between packet zones in the network. See paragraph [0007]. Unless the dormant mobile station has a traffic channel established for circuit-switched voice call support (which does not affect its "dormant" packet data status), it signals a request for dormant handoff by sending an Origination Message to the network using a common access channel shared with other mobile stations. See paragraph [0008].

A complication in this process arises for dormant mobile stations having multiple packet data service instances. Some networks, such as IS-2000 networks, allow for one Point-to-Point

Protocol (PPP) session with a mobile station to support multiple, distinct "packet data service instances." See paragraph [0009]. Each packet data service instance is supported by its own data connections (e.g., A8/A10 links), and can have its own Quality-of-Service (QoS) treatment. Dormant handoff must be performed for each packet data service instance, meaning that the common access channel signaling burden for dormant handoff for a single mobile station is multiplied by its number of packet data service instances. See paragraph [0011].

Independent Claim 1

Claim 1 addresses the above problem from the perspective of a communication network base station. Paragraph [0025] explains that a Base Station (BS) may sometimes be referred to as a Base Station System (BSS) including a Base Station Controller (BSC) and a Radio Base Station (RBS). Fig. 1 illustrates such a base station, including radio resources represented by RBS 24 and control resources represented by BSC 20 and Figs. 3A and 3B depict the combination of BSC 20 and RBS 24 as a "BS."

According to the claimed method, the base station initiates dormant handoff for a mobile station responsive to receiving a dormant handoff request from the mobile station for a first packet data service instance. Fig. 1 illustrates a BSC 20 supporting a mobile station 40, and paragraph [0029] (last sentence) describes the claim limitation of initiating dormant handoff, with reference to the logic flow diagram illustrated in Fig. 2.

Claim 1 further includes the limitation of recognizing that the mobile station has additional packet data service instances, and selectively assigning a traffic channel to the mobile station, to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel. Example support for this limitation is found in paragraph [0030], with its discussion of Steps 102 (recognizing multiple service instances), 104 (assigning a traffic channel), 106 (receiving additional dormant handoff requests on the traffic channel, and 108 (initiating corresponding additional dormant handoffs),

as illustrated in Fig. 2 for BSC 20. Also see paragraphs [0036]-[0038] (all lines), with reference to the call flow diagrams Figs. 3A and 3B.

Claim 1 thus can be understood as a base station method that intelligently recognizes circumstances where it is more desirable to allow a mobile station to use the common access channel to send multiple dormant handoff requests for its multiple packet data service instances, or more desirable to assign a traffic channel to the mobile station. Assigning the traffic channel causes the mobile station to send the additional dormant handoff requests over the traffic channel, rather than over the common access channel. Steps 102/104 in Fig. 2 illustrate an example of this processing.

Independent Claim 17

Claim 17 relates to claim 1 in the sense that it claims a method whereby a PCF signals to a base station the presence of multiple packet data service instances for a mobile station undergoing dormant handoff. Particularly, claim 17 is directed to a method wherein a PCF recognizes that a mobile station undergoing dormant handoff has multiple packet data services instances associated with it, and indicates that condition to a base station. Receiving such an indication from a PCF is one way that a base station can recognize the presence of multiple packet data service instances for any given mobile station. Beginning at line 4 in paragraph [0031], the specification details a Packet Data Serving Node (PDSN) 32 sending an indication to a PCF 28, of multiple packet data service instances for a dormant mobile station 40 that has sent a dormant handoff request. (Fig. 1 illustrates all of these entities and their interconnections, and Figs. 3A and 3B detail inter-entity signaling.)

The PCF 28 receiving a Multiple Service Instance (MSI) count from the PDSN 32 is one example of the claimed method of a PCF recognizing the presence of multiple packet data service instances for a mobile station undergoing dormant handoff. Further, line 13 in paragraph [0038] explains that the PCF sends the MSI count to a base station (BS) in an A9-Connect-A8

message. This teaching is an example of the claim 17 limitation of the PCF sending an indication of the multiple packet data service instances to the BS supporting dormant handoff of the mobile station.

Independent Claim 25

Claim 25 is directed to a method at a Packet Data Serving Node (PDSN), where the PDSN receives a registration request message for a first packet data service instance associated with a mobile station undergoing dormant handoff, determines that more than one packet data service instance is associated with the mobile station, and sends an indication of multiple packet data service instances in a registration reply message.

Fig. 1 illustrates a PDSN 32, and example support for all of these limitations is found in paragraph [0031] and in Figs. 3A and 3B. Paragraph [0031] explains that cdma2000 procedures provide for a PDSN 32 to receive a registration request in response to a dormant mobile station 40 initiating dormant handoff by sending an Origination Message to a supporting base station. Paragraph [0031] further details that the PDSN 32 checks whether the mobile station 40 has multiple packet data service instances associated with it. If so, the PDSN 32 constructs a registration reply message that includes an MSI (multiple service instances) value, indicating the number of packet data service instances that are associated with the mobile station 40.

The claimed PDSN method directly complements the PCF method claim 17 in that a PCF can recognize that a mobile station undergoing dormant handoff has multiple packet data service instances, based on inclusion by the PDSN 32 of the MSI value in its registration reply message. In turn, having that information at the PCF directly complements the base station method claim 1 in that the PCF can provide the service instance count to a base station, thereby enabling the base station to perform the method of claim 1.

Independent Claim 29

Claim 29 is directed to a method of improving dormant handoff of mobile stations in a cdma2000 network, and it includes the explicit limitation of receiving a dormant handoff request from a mobile station for a first packet service instance, via a common access channel shared with other mobile stations. The flow chart of Fig. 2, Step 100, and lines 4-10 of paragraph [0029] provide example support for this limitation, wherein a mobile station 40 with multiple packet data service instances sends a first dormant handoff request to a BSC 20 (base station controller), via a common access channel. (Paragraph [0021] identifies with reference to Fig. 1 a Radio Access Network (RAN) 12 that includes BSCs 20, and these entities are identified as being part of an IS-2000/cdma2000 network.)

Claim 29 includes the further limitation of determining whether the mobile station requesting dormant handoff has multiple packet data service instances with it, and, if so, assigning a traffic channel to the mobile station. Assigning the traffic channel in this manner causes the mobile station to send dormant handoff requests for its additional packet data services over the newly assigned traffic channel, rather than over the common access channel it shares with other mobile stations. Example support for these limitations is found in lines 1-7 of paragraph [0030] which describes steps 102, 104, 106, and 108 of Fig. 2.

Further support is found in paragraph [0031], lines 9-11, which explain that the PDSN 32 of Fig. 1 determines the number of packet data service instances associated with a mobile station that has requested dormant handoff. Lines 12-13 of that paragraph further detail the PCF 28 passing along that packet service instance count information to the BSC 20, which allows the BSC to know how many packet data service instances the mobile station has.

The overall "system" operation is well explained in paragraphs [0036]-[0038] of the instant application. Those paragraphs detail the operations illustrated in the call flows of Figs. 3A and 3B.

Independent Claim 30

Claim 30 is a detailed apparatus claim directed to a base station controller (BSC) that selectively assigns a traffic channel to a mobile station for dormant handoff, based on recognizing that the mobile station has multiple packet data service instances. The claim details various interfaces and control circuits to support the claimed operation.

The claimed BSC includes a first interface for communicating with one or more Radio Base Stations (RBSs) that support wireless communication with a plurality of mobile stations. Fig. 1 depicts a BSC 20 that includes an interface to an RBS 24, which supports wireless communication with a plurality of mobile stations. Paragraphs [0014] and [0022] describe the BSC/RBS interface.

The claimed BSC includes a second interface circuit to communicate with a Packet Control Function (PCF) that provides a Radio-Packet (RP) interface between the BSC and a Packet Switched Core Network (PSCN). Fig. 1 illustrates an A8 (data) / A9 (signaling) interface between BSCs 20 and PCFs 28. Paragraph [0023] provides an example explanation of this interface, with further example details given in Figs. 3A and 3B.

The claimed BSC further includes a control circuit to control dormant handoff of mobile stations. Paragraph [0014] introduces an example control circuit and Fig. 1 illustrates an example control circuit 22, which is further detailed in paragraph [0022]. The claimed control circuit initiates dormant handoff responsive to receiving a first handoff request from a mobile station for a first packet data service instance of the mobile station, responsive to receiving a first dormant handoff request from the mobile station. The claimed control circuit recognizes that the mobile station has multiple packet data service instances and selectively assigns a traffic channel to the mobile station, to cause it to send additional dormant handoff requests over the assigned traffic channel. Paragraphs [0014] and [0015] explain these operations, and paragraphs [0029]-[0032] detail the claimed BSC control circuit operations, in context with supporting PCF and PDSN operations.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by "Sayeedi '584" (U.S. Pub. 2003/0063584 A1).

Claims 1-6, 8-13, 16, 18-23, 25, 28-40, and 43 are rejected under 35 U.S.C. § 103(a) as being obvious over Sayeedi '584, in view of "Lancelot" (U.S. Pat. No. 6,026,086).

VII. ARGUMENT

The examiner bases all rejections on Sayeedi '584. However, the language quoted by the examiner in support of the rejections is completely absent from Sayeedi '584. Instead, the quoted language is found in U.S. Pub. 2004/0109423 A1 to Sayeedi et al. ("Sayeedi '423). In fact, Sayeedi '584 lacks any of the teachings relied upon for the rejections. Nor are Sayeedi '584 and Sayeedi '423 linked as related applications. Further, while Sayeedi '584 was filed before the instant application, and claims a priority date earlier than that claimed by the instant application, Sayeedi '423 was filed after the instant application, and its priority date is later than that of the instant application.

The bottom line is that the examiner appears to be using Sayeedi '584 for its filing and priority dates, while improperly attributing to it the teachings in Sayeedi '423, which is not prior art. This misattribution of teachings by the examiner goes back to the first Office Action, mailed on 4/6/2007. The rejections in that first action were all based on Sayeedi '584, and Applicant simply responded with rebuttal arguments that pointed out to the examiner that Sayeedi '584 lacked any of the teachings attributed to it.

The examiner stated that the rebuttal arguments were not persuasive and made those same rejections final in the Final Office Action (FOA) mailed on 2/22/2008. Notably, the FOA did not acknowledge or discuss the incontrovertible fact that Sayeedi '584 did not include a single mention of "packet data service instances" or any of the other language central to the rejections.

However, given the examiner's use of pinpoint citations to "Sayeedi" and the examiner's use of literal quotes allegedly from Sayeedi, Applicant text-searched the U.S. Patent databases and found Sayeedi '423. It was immediately clear that the examiner was quoting from Sayeedi '423, while attributing those quotes to Sayeedi '584.

With this new understanding, Applicant submitted an after-final response on 4/22/2008 that brought the misattribution problem to the examiner's attention in great detail. On 6/17/2008, the examiner called and threatened to restrict the instant application. The undersigned attorney pointed out that the examiner had already examined all claims and closed prosecution with his issuance of the FOA. The call concluded and the undersigned submitted a corresponding interview summary that same day.

The examiner did not reopen prosecution and Applicant submitted a Notice of Appeal on 6/25/2008. An Advisory Action was mailed by the examiner on 7/9/2008, which made no mention of the misattribution problem. Indeed, the examiner has not once acknowledged or addressed the self-evident fact that his rejection arguments quote Sayeedi '423, while incorrectly attributing Sayeedi '584.

Applicant respectfully asks the Board of Patent Appeals and Interferences ("Board") to review Sayeedi '584 and Sayeedi '423, as Applicant believes that a careful review by the Board will make clear the fundamental error at issue in all rejections.

Independent claim 17 is not anticipated by Sayeedi '584

Claim 17 is directed to a method of managing dormant handoff of mobile stations at a Packet Control Function (PCF). The method includes "recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances," and "sending an indication of the multiple packet data service instances to a Base Station (BS) supporting the dormant handoff of the mobile station."

Sayeedi '584 does not anticipate claim 17 because it fails to describe each and every element of the claimed PCF method. Under the controlling law, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987).

The determination of anticipation requires comparing a properly interpreted claim to the prior art. Id. For such determination, "words in claims are generally given their ordinary and customary meaning to a person of ordinary skill in the art at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312-1313, 75 U.S.P.Q.2d 1321 (Fed. Cir. 2005) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d 1573 (Fed. Cir. 1996)). However, "it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention." Id. at 1316, quoting United States v. Adams, 383 U.S. 39, 49, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966).

A key element of the anticipation rejection is the examiner's assertion that paragraphs [0002]-[0009] in Sayeedi '584 teach the claimed PCF method limitation of "recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances (paragraph 2-9)...." Final Office Action (FOA), Item 3, p. 2. These passages of Sayeedi '584 provide no such teachings and the rejection fails as a matter of law for this reason alone.

Of Sayeedi '584's paragraphs [0002]-[0009], only paragraph [0006] mentions a PCF, and that brief mention only states that a new BS-to-PCF connection is established in handoff. Nothing in paragraph [0006] or any other paragraph even hints at the concept of multiple packet data service instances, and paragraphs [0002]-[0009] of Sayeedi '584 self-evidently lack any teachings remotely relevant to the claimed recognizing limitation. Nor, apparently, does Sayeedi '584 anywhere else mention, suggest, or even hint at a PCF performing the recognizing limitation of claim 17.

For the record, paragraphs [0002]-[0009] in Sayeedi '423 do explicitly mention multiple packet data service instances. Frankly, however, paragraph [0003] in Sayeedi '423 reinforces the state of the art that was background for the instant invention. Namely, that paragraph teaches that, if a mobile station already had a traffic channel, it will use that traffic channel to send Enhanced Origination Messages (EOMs) over the traffic channel to initiate handoff of each dormant packet data service instance it has; otherwise, the mobile station sends an Original Message (OM) for each packet data service instance. Notably, however, the solution to this problem as offered by Sayeedi '423 is not that claimed in the instant invention but rather that articulated in the last sentence of paragraph [0013] in Sayeedi '423. There, Sayeedi '423 discloses a new signaling message allowing one message to be used to handoff multiple packet data service instances.

The rejection of claim 17 also relies on the assertion that Sayeedi '584 teaches the further limitation in claim 17 of the PCF "sending an indication of the multiple packet data service instances to a Base Station (BS) supporting the dormant handoff of the mobile station." In support, the examiner refers to Figs. 1-3, paragraphs [0002]-[0009], and paragraph [0016] of Sayeedi '584. Even a cursory inspection of the cited passages and figures reveals that Sayeedi '584 provides no teachings relevant to the claim limitation, and the rejection of claim 17 as anticipated by Sayeedi '584 fails as a matter of law for this further reason.

Independent claim 1 is not obvious over Sayeedi '584 and Lancelot

Claim 1 is directed to a base station method that includes initiating dormant handoff of a mobile station responsive to receiving a first dormant handoff request from the mobile station, for a first packet data service instance of the mobile station, and recognizing that the mobile station has additional packet data service instances requiring dormant handoff. The method further includes "selectively assigning a traffic channel to the mobile station to cause the mobile

station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel." (Emphasis added.)

Claim 1 is not obvious over the argued-for combination of Sayeedi '584 and Lancelot. Under Section 103 of 35 U.S.C., an invention is obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The question of obviousness is resolved on the basis of underlying determinations of fact, including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966).

The examiner has not carried the legal burden of establishing a *prima facie* case for obviousness regarding claim 1, not least because of errors regarding the first and second prongs of the Graham analysis. Namely, the examiner errs when alleging that Sayeedi '584 provides teachings relevant to claim 1's method limitations relating to recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances associated with it. Sayeedi '584 does not once mention or allude to the concept of multiple packet data service instances, nor does Lancelot. Thus, the examiner has incorrectly identified the teachings of the prior art, and has incorrectly compared those teachings to the claimed limitation. Sayeedi '584 and Lancelot, taken individually or in any combination, do not teach or suggest recognizing that a mobile station undergoing dormant handoff for a first packet data service instance has additional packet data service instances associated with it.

Nor do Sayeedi '584 and Lancelot provide even the first instance of teachings relevant to the limitation in claim 1 of "selectively assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel." Again, Sayeedi '584 and Lancelot include

no mention of, reference to, or suggestion about the concept of a mobile station having multiple packet data service instances.

For completeness of the appeal record, Sayeedi '423 is definitely aware of a mobile station having multiple packet data service instances. However, Sayeedi '423 expressly teaches away from the claimed selective assignment of a traffic channel to carry additional dormant handoff requests for a mobile station's additional packet data service instances. Instead, Sayeedi '423 expressly teaches a new dormant handover message, which allows multiple packet data service instances to be identified in one message. See Flow 300 in Fig. 3 of Sayeedi '423 and see the corresponding description at paragraph [0023] which explicitly disclose the use of a new type of Origination Message that carries multiple Service Reference Identifier values (SR_IDs), such that one original message initiates handoff of up to six packet data service instances. This is done explicitly without use of a traffic channel assignment.

Because the argued-for combination of Sayeedi '584 and Lancelot do not provide the teachings alleged by the examiner, the combination does not teach every limitation of claim 1—indeed, Applicant submits that the combination does not teach any limitation of claim 1. The examiner therefore has not carried the legal burden of establishing a *prima facie* case for obviousness, and the rejection of claim 1 fails as a matter of law for this reason alone.

In relation to a further failing, Applicant notes that the Supreme Court of the United States recently emphasized the Graham decision as a reference point for determining legal obviousness. KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007). In KSR, the Court elaborated on the analysis of obviousness, and reiterated the point that a combination of familiar elements according to known methods is likely to be obvious. Applicant submits that the selective assignment by a base station of a traffic channel to carry additional dormant handoff requests from a mobile station undergoing dormant handoff is not a combination of familiar elements according to known methods.

Indeed, there is no evidence of record relating to such usage. As noted, Lancelot teaches sending an original message from a secondary station 110, to request assignment of a traffic channel as part of setting up an active call. That processing is irrelevant to the claim at issue. Further, Sayeedi '423 addresses the problem of dormant handoff of a mobile station having multiple packet data service instances by defining a new origination message that carries multiple identifiers for the multiple packet data service instances. However, Sayeedi '423 expressly does not send multiple, single dormant handoff requests for multiple packet data service instances, and expressly avoids the use of a traffic channel, and Sayeedi '584 does not even mention packet data service instances.

Applicant submits that the method of claim 1 does not represent the simple substitution of one element for another or the mere application of a known technique to a piece of prior art ready for the improvement. As such, according to the Court in KSR, a finding of obviousness must be supported by some showing by the Office, supported by "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR at 1741 quoting In re Kahn, 441 F.3d 977, 988, 78 U.S.P.Q.2d 1329 (Fed. Cir. 2006). There is no rational underpinning to combine Lancelot's teachings related to an explicit request for a traffic channel to conduct a call, with teachings in Sayeedi '584 related to dormant handoff, and the argued-for combination appears to be contrived solely to support the examiner's intent to reject claim 1.

Dependent claims 2-6, 8-13, and 16 are not obvious over Sayeedi '584 and Lancelot

None of the claims depending from claim 1 are obvious over Sayeedi '584 and Lancelot because claim 1 as a matter of law is not obvious over that combination.

Further, regarding claim 2, the rejection argument that "any indication or request for packet data service instances requiring dormant handoff inherently is communicated via the PCF" misses the point entirely. Claim 2 explicitly claims that the base station of claim 1

recognizes that a mobile station undergoing dormant handoff has multiple packet data service instances associated with it, based on receiving an indication from a PCF. In Sayeedi '584, there is no mention of such indicators, and Sayeedi '584 is silent regarding the concept of packet data service instances. In contrast, the background of the instant application explains that the prior art approach involved the base station receiving a dormant handoff request from the mobile station for each of its packet data service instances and communicating those requests to a PCF. There is no basis for the alleged "inherency" of claim 2, and Applicant submits that the record evidence demonstrates that claim 2 limitations are not inherent in prior art PCFs.

Claims 3 and 4 go to the nature of selectively assigning a traffic channel in claim 1 by claiming that a traffic channel is assigned if the total number of packet data service instances for dormant handoff exceed a threshold (claim 3) or is two or greater (claim 4). The instant application explains, for example, that the overhead of setting up a traffic channel may not be worthwhile if a mobile station requesting dormant handoff only has a low number of packet data service instances. Neither Sayeedi '584 nor Lancelot have any teachings related to dormant handoff of multiple packet data service instances, nor does either teach or suggest comparing the number of packet data service instances to be handed off to a threshold or a count, for determining whether or not to assign a traffic channel to a mobile station.

Claim 5 conditions the selective assignment of a traffic channel in claim 1 based on resource availability at the base station. The rejection of claim 5 depends on the assertion that resource availability is an inherent condition in the assignment of a traffic channel. Again, this argument misses the point of the claim. Namely, the traffic channel at issue is being assigned for the purpose of carrying additional dormant handoff requests, and not for call setup (as in Lancelot and any other reference related to wireless communication networks that use dedicated traffic channels to support mobile station calls). Here, the evaluation of base station

resources is in the context of determining whether it is worthwhile to make a traffic channel assignment strictly for the purpose of carrying dormant handoff requests.

Neither Sayeedi '584 nor Lancelot provide any teachings, and the evaluation of claim 5 is not inherent. Nor is claim 6 obvious over Sayeedi '584 and Lancelot. Claim 6 depends from claim 5 and adds the limitation of conditioning the selective traffic channel assignment based on how many additional packet data service instances the mobile station has. Sayeedi '584 and Lancelot are utterly devoid of any related teachings. (Nor, for the record, does Sayeedi '423 disclose anything relevant to claims 5 and 6.)

Claim 9 discloses that additional dormant handoff requests are received from a mobile station for its additional packet data service instances as Enhanced Origination Messages (EOMs) sent over the traffic channel selectively assigned in claim 1. It is true that the prior art teaches a mobile station sending such handoff requests as EOMs, if it already had a traffic channel assigned to it. (The instant application acknowledges this point, and Sayeedi '584 at paragraph [0003] also makes that observation.) However, what is at issue in claim 9 is that the EOMs are being received over the traffic channel selectively assigned to support dormant handoff. The prior art does not teach the selective assignment of a traffic channel for the purpose manifest in claim 9. Claim 12 is non-obvious for the same reason.

Regarding claims 13 and 16, the examiner admits that the claimed limitations are missing from Sayeedi '584 and Lancelot. However, the examiner rejects claims 13 and 16 as obvious design choices. There is zero evidence in the record to support that assertion.

However, the examiner justifies the "obvious design choice" determination based on the erroneous assertion that the instant application states no particular purpose or use for the limitation in claims 13 and 16. Claim 13 states that the "recognizing" limitation in claim 1 "comprises retaining information obtained during a prior hard handoff of the mobile station regarding a number of packet data service instances associated with the mobile station." Claim

16 adds the limitation that such information is retained in view of receiving from a source base station involved in the prior hard handoff.

The particular purpose is express in the claims, i.e., the number of packet data service instances involved in a hard handoff is known, and claims 13 and 16 advantageously claim remembering that information from a hard handoff for use in a later dormant handoff. (See paragraph [0045] of the instant application.) It is nonsense for the examiner to assert that Applicant has stated no purpose for the limitation and there is no record evidence that the limitations in claims 13 and 16 are an obvious design choice.

Dependent claims 18-23 are not obvious over Sayeedi '584 and Lancelot

None of the claims depending from claim 17 are obvious over Sayeedi '584 and Lancelot because claim 17 as a matter of law is not anticipated by Sayeedi '584, nor is claim 17 obvious in view of Sayeedi '584 and Lancelot.

Further, claim 18 adds to claim 17 the limitation that the base station (BS) assigns the traffic channel identified to the mobile station responsive to receiving an indication (of multiple dormant packet data service instances) from a PCF, and the further limitation of suppressing a subscriber accounting message that is normally sent by the PCF to a PDSN, as part of assigning traffic channels. The point of this claim is to prevent the user of the mobile station from being assessed traffic channel charges (air time charges) for the traffic channel assignment because the assignment is being done by the base station purely for the purpose of improving the efficiency of dormant handoff of multiple packet data service instances. See paragraph [0015] of the instant application.

The rejection arguments against claim 18 begin on p. 8 and conclude on p. 9 of the FOA. These arguments state without support that Lancelot's teachings regarding the assignment of a traffic channel for call setup are relevant to and combine in some logical way with the teachings in Sayeedi '584 relating to dormant handoff. Worse, the arguments skip over

the fact that neither Sayeedi '584 nor Lancelot include any teachings related to the claimed suppression of accounting information.

Notably, the examiner does not even attempt to identify teachings from either reference related to the suppression of accounting information. Instead, the examiner states that it would be obvious to modify Sayeedi '584 with Lancelot to achieve the claimed accounting information suppression, "for the purpose of reducing overhead and preserving the control channel and consequently providing efficient resource allocation." None of that has anything to do with the claim 18 limitation of suppressing accounting information, nor with the follow-up limitation of claim 19 (depending from claim 18), clarifying that subscriber accounting messages will be sent upon detection of any data transfer to or from the mobile station. (Claim 19 states, in other words, that normal accounting charges are assessed if there is any data transfer, but this is done in view of the suppression of accounting charges if the traffic channel of claim 18 is simply used to make dormant handoff more efficient.)

Claim 20 depends from claim 17, and claim 21 depends from claim 20. Both claims relate to the PCF of claim 17 recognizing that the mobile station undergoing dormant handoff has multiple packet data service instances based on receiving a registration reply message from a Packet Data Serving Node (PDSN), as part of re-registering the mobile's first packet data service instance (claim 20), and sending a corresponding indication to a base station supporting the dormant handoff (claim 21).

There is not a single instance of support in Sayeedi '584 and Lancelot for the assertion that they teach or even suggest the claimed PDSN/PCF signaling and the claimed PCF/BS signaling. Again, in its entirety, Sayeedi '584 is completely silent regarding the concept of packet data service instances and Lancelot is, frankly, irrelevant to the instant claims. As such, there is no basis in fact or law for the obviousness rejection of claims 20 and 21, nor for the rejection of claim 22, which stipulates that the PCF of claim 17 sends a multiple service instance count to

the supporting BS. (The multiple service instance count identifies the number of dormant packet data service instances that are associated with the mobile station undergoing dormant handoff.)

Regarding the rejection of claim 23, the rejection fails for at least the reasons given above in support of claims 13 and 16.

Independent claim 25 is not obvious over Sayeedi '584 and Lancelot

Claim 25 is directed to a method at a Packet Data Serving Node (PDSN), wherein the PDSN sends an indication of multiple packet data service instances in a registration reply message, which is generated by the PDSN responsive to receiving a registration request message for a first packet data service instance associated with a mobile station undergoing dormant handoff.

The examiner refers to the rejection of claim 1 for support of the rejection of claims 25, 29, and 30. See FOA at the bottom of p. 12. The rejection fails as a matter of law because Sayeedi '584 does not discuss or even allude to the concept of multiple packet data service instances and, consequently, provides no teachings regarding a PDSN determining that a mobile station undergoing dormant handoff has multiple packet data service instances, nor sending an indication of such in a registration reply message. Lancelot is inapposite to the claim limitations and, indeed, to the general context of dormant handoff of packet data service instances, and the argued-for combination of Lancelot with Sayeedi '584 does not cure the deficiencies in the rejection. As the combination of Sayeedi '584 and Lancelot fail to teach the limitations of claim 25, the corresponding rejection of claim 25 fails as a matter of law.

Dependent claim 28 is not obvious over the combination of Sayeedi '584 and Lancelot

Claim 28 depends from claim 25, and adds the further limitation of the PDSN suppressing the indication of multiple packet data service instances in subsequent registration reply messages corresponding to additional registration request messages received for any

additional packet data service instances associated with the mobile station (undergoing dormant handoff). The examiner concedes that Sayeedi '584 and Lancelot do not teach claim 28, but states that claim 28 is an "obvious design choice."

On p. 11 of the FOA, the examiner argues that he can make the obvious design choice assertion because Applicant disclosed no use or purpose for the claim limitation. Setting aside the speciousness of that assertion on points of law and procedure, claim 28 advantageously presents a limitation whereby the PDSN advantageously skips repeated, redundant transmission of the indication of multiple packet data service instances.

The examiner concedes that the claim is not taught by the references and has provided no acceptable basis for concluding that the limitation is merely an obvious design choice. The rejection fails as a matter of law and should be withdrawn.

Independent claim 29 is not obvious over Sayeedi '584 and Lancelot

Claim 29 is a comprehensive and detailed method claim directed to improving dormant handoff in a CDMA2000 network. Sayeedi '584 is directed to dormant handoff in such a network, but Sayeedi '584 has no teachings related to the limitations in claim 29 that are expressly directed to determining whether a mobile station undergoing dormant handoff is associated with multiple packet data service instances. As reiterated throughout this appeal brief, Sayeedi '584 does not mention packet data service instances in any respect, and therefore does not mention determining whether a mobile station undergoing dormant handoff has multiple packet data service instances associated with it. Lancelot is inapposite because it is literally unrelated to the claimed subject matter. (Lancelot is used in all rejections for its bare mention that a registration message can be sent by a secondary station 110 (mobile terminal) once a traffic channel is assigned to it. But that teaching expressly appears in the context of the secondary terminal initiating a call, and it has nothing to do with making traffic channel assignments to improve dormant handoff.)

Consequently, by definition, Sayeedi '584 provides no teachings related to the claim 29 limitation of "if the mobile station is associated with multiple packet data service instances, assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for any additional packet data service instances via signaling on the assigned traffic channel." As Sayeedi '584 and Lancelot fail to teach the limitations of claim 29, the rejection of claim 29 as obvious over the combination fails as a matter of law.

Independent claim 30 is not obvious over Sayeedi '584 and Lancelot

Claim 30 is a comprehensive and detailed apparatus claim directed to a Base Station Controller (BSC) that includes first and second interfaces to communicate with RBSs and PCFs (respectively) and, notably, includes a control circuit to control dormant handoff. The control circuit (e.g., see control circuit 22 in BSC 20 in Fig. 1), is claimed as being configured to recognize that a mobile station undergoing dormant handoff has additional packet data service instances associated with it, and to selectively assign a traffic channel to the mobile station, to cause it to send additional dormant handoff requests for those additional packet data service instances via the newly assigned traffic channel.

The examiner does not particularize the rejection of claim 30, but the rejection fails at least for the reasons given in support of claim 1. Further, the rejection of claim 30 independently fails because neither Sayeedi '584 nor Lancelot disclose the claimed control circuit. Nor can the presence of the claimed control circuit be considered as being inherently presented in Sayeedi '584 because Sayeedi '584 does not disclosed the functionally related configuration attributed to the claimed control circuit.

Dependent claims 31-40, and 43 are not obvious over Sayeedi '584 and Lancelot

The examiner gives no particularized rejection of claims 31-40 and 43 in the FOA. Claims 31-40 and 43 are not obvious over Sayeedi '584 and Lancelot because independent claim 30 is not obvious over that combination. Additionally, claims 31-40 and 43 add further limitations not taught by Sayeedi '584 and Lancelot.

Claim 31 stipulates that the claimed control circuit recognizes that the mobile station undergoing dormant handoff had multiple packet data service instances based on receiving an indicator returned from a PCF in response to the BSC initiating dormant handoff of the mobile station. Claim 2 is similar and was rejected based on the non-detailed argument that Sayeedi '584 and Lancelot taught the claimed PCF/BSC signaling.

As Sayeedi '584 never mentions packet data service instances, and never mentions handling any (much less multiple) packet data service instances, and as Lancelot is inapposite to the claimed subject matter, the combination of Sayeedi '584 and Lancelot fails to teach the limitations of claim 31 and the rejection of claim 31 therefore fails as a matter of law under the Graham analysis.

Claims 32 and 33 stipulate that the control circuit selectively assigns the traffic channel based on determining whether the count of packet data service instances exceeds a threshold (claim 32), or based on determining that the count is two or greater (claim 33). See paragraph [0043] in the instant application for an example. The examiner has failed to identify any passage or illustration in Sayeedi '584 or in Lancelot that has even passing relevance to the claimed count/threshold limitation. The combination of Sayeedi '584 and Lancelot thus fails to teach the limitations of claims 32 and 33, and the rejections fail as a matter of law under the Graham analysis.

Claim 34 depends from claim 30 and provides limitations directed to the temporary nature of the traffic channel assignment made in claim 30, and specifically states that the control circuit counts dormant handoff requests received over the traffic channel and releases the traffic

channel once the count equals the number of additional packet data service instances (associated with the mobile station).

The examiner refers to no teachings in Sayeedi '584 or Lancelot supporting the rejection of this claim. Applicant submits that no relevant teachings exist in either reference, and that the rejection of claim 34 is unsupported by the evidence of record. The rejection therefore fails as a matter of law under the Graham analysis.

Claim 36 is similar to claim 9, and the rejection of claim 36 further fails at least for the reasons given for claim 9. Similarly, the rejection of claim 39 further fails at least for the reasons given for claim 12.

Claim 40 is similar to claim 13, and the rejection of claim 40 further fails at least for the reasons given for claim 13.

Claim 43 is similar to claim 5, and the rejection of claim 43 further fails at least for the reasons given for claim 5.

Conclusion of arguments

On p. 13 of the FOA, the examiner states that "Sayeedi clearly reads on the claimed elements indicated in the above rejection." Applicant disagrees. What is clear is that the examiner quotes Sayeedi '423 to support all rejection arguments, while stating that Sayeedi '584 is the basis for rejecting the claims. This misattribution is critical because Sayeedi '423 is not prior art, given its filing and priority dates. Sayeedi '584 could be prior art in view of its filing and priority dates, but Sayeedi '584 includes none of the "packet data service instance" teachings found in Sayeedi '423, and even a cursory reading of Sayeedi '584 makes clear that teachings relied upon for all rejections are entirely missing from Sayeedi '584.

In contrast, Sayeedi '423 does relate to dormant handoff of multiple packet data service instances. However, where all claims at issue on appeal involve the advantageous assignment of a traffic channel, to cause a mobile station to send dormant handoff requests for additional

packet data service instances on the newly assigned traffic channel, Sayeedi '423 teaches a new type of origination message that carries multiple identifiers for multiple packet data service instances. See paragraph [0023] and Flow 300 of Fig. 3 in Sayeedi '423, where Sayeedi '423 avoids sending multiple origination messages by virtue of this new original message, and expressly does not make a traffic channel assignment to cause a mobile station to send multiple dormant handoff requests over the assigned traffic channel.

The bottom line is that Sayeedi '423 is unavailable for use and Sayeedi '584 includes no teachings remotely supporting the rejection, and Lancelot used in all obviousness rejections is inapposite to the claimed subject matter. Applicant respectfully requests that all rejections be withdrawn, and that the instant application be permitted to move to allowance.

VIII. CLAIMS APPENDIX

The following claims are on appeal:

1. A method of managing dormant handoffs of mobile stations at a wireless communication network Base Station (BS), the method comprising:

initiating dormant handoff of a mobile station that is undergoing a packet data mobility event responsive to receiving a first dormant handoff request from the mobile station for a first packet data service instance of the mobile station; and

recognizing that the mobile station has additional packet data service instances requiring dormant handoff and selectively assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel.

2. The method of claim 1, wherein recognizing that the mobile station has additional packet data service instances requiring dormant handoff comprises receiving a multiple service instance indicator in a message returned by a Packet Control Function (PCF) in response to the BS initiating dormant handoff of the mobile station.

3. The method of claim 1, wherein selectively assigning a traffic channel to the mobile station comprises assigning the traffic channel if a total number of multiple service instances for the mobile station exceeds a threshold.

4. The method of claim 1, wherein selectively assigning a traffic channel to the mobile station comprises assigning the traffic channel if the mobile station has two or more packet data service instances.

5. The method of claim 1, wherein selectively assigning a traffic channel to the mobile station comprises selectively assigning or not assigning a traffic channel to the mobile station based on resource availability at the BS.

6. The method of claim 5, wherein selectively assigning a traffic channel to the mobile station comprises selectively assigning or not assigning a traffic channel to the mobile station further based how many additional packet data service instances the mobile station has.

8. The method of claim 1, wherein receiving a first dormant handoff request from the mobile station for a first packet data service instance of the mobile station comprises receiving an Origination message from the mobile station over a common access channel of the BS.

9. The method of claim 8, further comprising receiving the additional dormant handoff requests as Enhanced Origination messages from the mobile station over the assigned traffic channel.

10. The method of claim 8, further comprising determining that the Origination message is a dormant handoff request by inspecting a data ready/not ready indicator in the Origination message.

11. The method of claim 1, further comprising initiating dormant handoff of each additional packet data service instance responsive to receiving each additional dormant handoff request.

12. The method of claim 11, wherein receiving each additional dormant handoff request comprises receiving an Enhanced Origination message for each additional dormant handoff request over the assigned traffic channel.

13. The method of claim 1, wherein recognizing that the mobile station has additional packet data service instances requiring dormant handoff and selectively assigning a traffic channel to the mobile station comprises retaining information obtained during a prior hard handoff of the mobile station regarding a number of packet data service instances associated with the mobile station.

16. The method of claim 13, wherein retaining information obtained during a prior hard handoff of the mobile station regarding a number of packet data service instances associated with the mobile station comprises retaining service instance information received from a source BS during the prior hard handoff of the mobile station.

17. A method of managing dormant handoffs of mobile stations at a wireless communication network Packet Control Function (PCF), the method comprising:

recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances; and

sending an indication of the multiple packet data service instances to a Base Station (BS) supporting the dormant handoff of the mobile station.

18. The method of claim 17, wherein the BS assigns a traffic channel to the mobile station responsive to receiving the indication from the PCF, and further comprising suppressing a subscriber accounting message that is normally sent by the PCF to a Packet Data Serving Node (PDSN) as part of assigning traffic channels to mobile stations.

19. The method of claim 18, further comprising sending a subscriber accounting message responsive to detecting data transfer to or from the mobile station for any packet data service instance.

20. The method of claim 17, wherein recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances comprises recognizing an indication of multiple packet data service instances in a registration reply message returned by a Packet Data Serving Node (PDSN) as part of re-registering a first one of the multiple packet data service instances.

21. The method of claim 20, wherein sending an indication of the multiple packet data service instances to a Base Station (BS) supporting the dormant handoff of the mobile station comprises passing the indication of the multiple packet data service instances received from the PDSN along to the BS unless the PCF has already set up an A8 connection for the mobile station.

22. The method of claim 17, wherein sending an indication of the multiple packet data service instances to a Base Station (BS) supporting the dormant handoff of the mobile station comprises sending a multiple service instance count to the BS.

23. The method of claim 17, wherein recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances comprises using information obtained during a prior hard handoff of the mobile station regarding a number of packet data service instances associated with the mobile station.

25. A method of managing dormant handoffs of mobile stations at a wireless communication network Packet Data Serving Node (PDSN), the method comprising:

receiving a registration request message for a first packet data service instance associated with a mobile station undergoing a dormant handoff;

determining that more than one packet data service instance is associated with the mobile station; and

sending an indication of multiple packet data service instances in a registration reply message responsive to the registration request message.

26. The method of claim 25, wherein the indication of multiple packet data service instances comprises a service instance count value included in the registration reply message, and wherein the service instance count value depends on a number of packet data service instances associated with the mobile station.

28. The method of claim 25, further comprising suppressing the indication of multiple packet data service instances in subsequent registration reply messages corresponding to additional registration request messages received for any additional packet data service instances associated with the mobile station.

29. A method of improving dormant handoff of mobile stations in CDMA2000 wireless communication networks, the method comprising:

receiving a dormant handoff request from a mobile station for a first packet data service instance via a common access channel shared with other mobile stations;

determining whether the mobile station is associated with multiple packet data service instances; and

if the mobile station is associated with multiple packet data service instances, assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for any additional packet data service instances via signaling on the assigned traffic channel.

30. A Base Station Controller (BSC) for use in a wireless communication network, the BSC comprising:

a first interface to communicate with one or more Radio Base Stations (RBSs) that support wireless communication with a plurality of mobile stations;

a second interface circuit to communicate with a Packet Control Function (PCF) that provides a Radio-Packet (RP) interface between the BSC and a Packet Switched Core Network (PSCN); and

a control circuit to control dormant handoff of mobile stations, wherein the control circuit is configured to:

initiate dormant handoff of a mobile station that is undergoing a packet data mobility event responsive to receiving a first dormant handoff request from the mobile station for a first packet data service instance of the mobile station; and

recognize that the mobile station has additional packet data service instances requiring dormant handoff and selectively assign a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel.

31. The BSC of claim 30, wherein the control circuit recognizes that the mobile station has additional packet data service instances requiring dormant handoff based on receiving a

multiple service instance indicator in a message returned by the PCF in response to the BSC initiating dormant handoff of the mobile station.

32. The BSC of claim 30, wherein the control circuit selectively assigns a traffic channel to the mobile station based on determining whether a count of the packet data service instances exceeds a threshold.

33. The BSC of claim 30, wherein the control circuit selectively assigns a traffic channel to the mobile station based on assigning the traffic channel if the mobile station has two or more packet data service instances.

34. The BSC of claim 30, wherein the control circuit is configured to count subsequent dormant handoff requests sent by the mobile station over the assigned traffic channel and release the traffic channel once the count equals the number of additional packet data service instances.

35. The BSC of claim 30, wherein the control circuit receives a first dormant handoff request from the mobile station for a first packet data service instance of the mobile station based on the first interface receiving an Origination message sent from the mobile station over a common access channel supported by the BSC.

36. The BSC of claim 35, wherein the control circuit receives the additional dormant handoff requests based on the first interface receiving Enhanced Origination messages sent from the mobile station over the assigned traffic channel.

37. The BSC of claim 35, wherein the control circuit is configured to determine that the Origination message is a dormant handoff request by inspecting a data ready/not ready indicator in the Origination message.

38. The BSC of claim 30, wherein the control circuit is configured to initiate dormant handoff of each additional packet data service instance responsive to receiving each additional dormant handoff request from the mobile station.

39. The BSC of claim 38, wherein the control circuit receives each additional dormant handoff request comprises receiving an Enhanced Origination message sent by the mobile station over the assigned traffic channel for each additional packet data service instance.

40. The BSC of claim 30, wherein the control circuit is configured to recognize that the mobile station has additional packet data service instances requiring dormant handoff by retaining information obtained during a prior hard handoff of the mobile station regarding a number of packet data service instances associated with the mobile station.

43. The BSC of claim 30, wherein the control circuit is configured to selectively assign a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel based on resource availability at the BSC.

IX. EVIDENCE APPENDIX

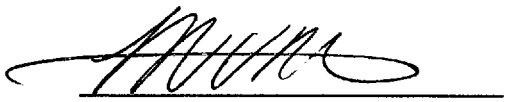
None.

X. RELATED PROCEEDINGS APPENDIX

None.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.



Dated: 4 February 2009

Michael D. Murphy
Attorney for Applicant
Registration No.: 44,958